

pregnant women and high risk groups. It has been indicated that simple rapid syphilis tests are already changing patient management and there is a promising pipeline of technologies that can strengthen syphilis testing and management, but we still need further research on the use of rapid non-treponemal titration tests to monitor response to treatment, and rapid treponemal-specific IgM test for diagnosis of congenital infection, platform to ensure access to syphilis testing and intervention, and enabling environment to accelerate introduction of these tests.

# SP 15-3

## RAPID DETECTION OF MDROS FOR INFECTION CONTROL

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The global spread of multidrug-resistant organisms (MDROs) represents a serious threat to public health and the economy. Therefore, optimal treatment and prevention of MDRO infections are very important. Rapid detection of MDROs will help physicians make optimal treatment decisions and help public health officials take action to prevent and control the infections. Presently, most detection methods take 24 to 72 hours from specimen collection to results, with culture-based tests to determine antimicrobial susceptibility adding additional a few days. On the other hand, molecular methods offer rapid turnaround times (TATs), often <2 hours, and often have higher sensitivity than culture methods. Recent detection technologies using molecular methods are changing at rapid pace.

Among the MDROs, the most prevalent causes of healthcare-associated infections are methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *Enterococcus* (VRE), and a wide variety of multidrug-resistant gram-negative rods (MDR-GNRs).

MRSA is the organism for which there is the most experience with rapid detection of carriage. Several types of molecular assays for detection of MRSA directly from patient samples (e.g. nares) were introduced, and they have been demonstrated to be more sensitive than culture-based methods. VRE is the next most common target of tests for detection of MDRO carriage. In contrast to screening for MRSA carriage, little enthusiasm has developed for routine screening for the VRE carrier state.

Compared to MRSA and VRE, for which a single gene (*mecA*, *vanA*) provides a gold standard for MDRO detection, MDR-GNRs present a much greater challenge, because of their resistance mechanisms are multiple and highly complex. Most laboratories that perform screening for MDR-GNRs carriage use one of a variety of culture-based methods with analytic TATs of 24 hours or longer.

The development of rapid detection tests, combined with ongoing use of culture-based tests to identify new resistance mechanisms, will greatly advance detection, control, and prevention of MDROs such as MRSA, MDR-GNRs, etc, and may help hospitals to improve infection control activities.

## SYMPOSIUM 16 (SP 16)

### SURGICAL SITE INFECTIONS AND THE OPERATING THEATRE

# SP 16-1

## WHO AND CDC GUIDELINES: KEY RECOMMENDATIONS

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No abstract.

# SP 16-2

## SURGICAL UNIT-BASED SAFETY PROGRAM: TAPPING INTO THE WISDOM OF FRONTLINE STAFF

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**Background:** Surgical site infections (SSI) are a common and costly problem, prolonging hospitalization and increasing readmission. The global burden of preventable SSI continues to result in patient harm and increased health care costs.

**Study design:** We designed a study to evaluate the association between implementation of a surgery-based Comprehensive Unit-Based Safety Program (CUSP) and postoperative SSI rates. CUSP builds on the principles of high reliability organizations to educate frontline providers, identify and learn from local defects, partner with a senior executive, and introduce teamwork and communication tools to improve teamwork and safety culture. Pre- and post-CUSP intervention SSI rates were collected using standardized definitions provided by American College of Surgeons National Surgical Quality Improvement Program (July 2009 to February 2014). The CUSP group met monthly and consisted of a multidisciplinary team of front-line providers (eg, surgeons, nurses, operating room technicians, and anesthesiologists) who were directly involved in the care of colorectal surgery patients along with the support of advanced practice providers, office coordinators, and hospital leadership.

**Results:** In the 12 months before implementation of the CUSP and interventions, the mean SSI rate was 27.3% (76 of 278 patients). After commencement of interventions, the rate was 18.2% (59 of 324 patients) for the subsequent 12 months—a 33.3% decrease (95% CI, 9–58%;  $p < 0.05$ ) <sup>1</sup>. The SSI rate decreased further to less than 9% in 2014. The interventions included standardization of skin preparation; administration of preoperative chlorhexidine showers; selective elimination of mechanical bowel preparation; warming of patients in the preanesthesia area; adoption of enhanced sterile techniques for skin and fascial closure; addressing previously unrecognized lapses in antibiotic prophylaxis; and standardizing anesthetic management including pain control and fluid resuscitation.

**Conclusions:** Formation of small groups of front-line providers to address patient harm using local wisdom and existing evidence can improve patient safety. We demonstrate a surgery-based CUSP intervention that was associated with a markedly decreased SSI rate in a high-risk population. We are now implementing the multifaceted intervention, called the Surgical Unit-Based Safety Program (SUSP) in 195 hospitals across 37 states.

<sup>1</sup> Wick EC, et al. *J Am Coll Surg* 2012;215(2):193-200.

# SP 16-3

## SMALL, SMALLER, SMALLEST! HOW TO (IF EVER) CLEAN AND STERILIZE MICROSURGICAL INSTRUMENTS AND ROBOT ARMS?

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No abstract.

# SP 16-4

## SURGICAL CHECKLISTS: DO THEY IMPROVE PATIENT SAFETY?

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**Background:** In the Operating Theatre besides focus on preventing hospital-acquired infections, we must also prevent complications from surgical procedures. These complications can be infection related e.g. swabs left in the abdomen. Since the introducing of safety checklist in 2013 we are able to detect mishaps more efficiently.

One simple way to prevent mishaps is to use checklist to aid memory and communication. Surgical checklists provide guidance and allow tracking of completed tasks. Operation efficiency and team satisfaction are enhanced by using surgical safety checklist.

**Method:** Meeting with relevant personnel to gather information on:

1. The types of operation performed in the hospital.
2. The types of mishaps / incidences from Operating Theatre were reviewed over the last 2 years.
3. Brainstormed information needed in the Safety Checklist
4. Draft out Safety Checklist for review by personnel involved

The Nurse Clinician from Operating Theatre designed the checklist in 3 sessions:

- Session A Sign in – Before Induction of Anaesthesia
- Session B Time Out – Before Skin Incision
- Session C Sign out – Before patient leave Operating Theatre

**Result:** The Surgical Safety Checklists do improve the communication among surgical team. Surgical mishaps can be detected soon before